

## CLAIMS

1. A method of increasing the number of ST receptor molecules on the surface of a metastasized colorectal cancer cell in an individual who has metastasized colorectal cancer,  
5 said method comprising the step of:  
administering to said individual by substantially continuous infusion, at least .1nM of an ST receptor ligand per 10 kg. bodyweight of said individual per hour for at least 6 hours,  
wherein ST receptor ligand molecules bind to ST receptors on the surface of a metastasized  
10 colorectal cancer cell in said individual and the number of ST receptor molecules on the surface of said metastasized colorectal cancer cell is increased.
2. The method of claim 1 wherein said ST receptor ligand is administered into the circulatory system of said individual.  
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3. The method of claim 1 wherein said ST receptor ligand is administered intravenously.
4. The method of claim 1 wherein said ST receptor ligand is administered  
20 intratumorally.
5. The method of claim 1 wherein said ST receptor ligand is an anti-ST receptor antibody.
- 25 6. The method of claim 6 wherein said ST receptor ligand is an anti-ST receptor monoclonal antibody.
7. The method of claim 1 wherein said ST receptor ligand is an ST receptor binding peptide.  
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8. The method of claim 7 wherein said ST receptor peptide is selected from the group

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consisting of: SEQ ID NO:2, SEQ ID NO:3, SEQ ID NOS:5-56 and fragments and derivatives thereof.

9. The method of claim 8 wherein said ST receptor binding peptide is selected from the group consisting of SEQ ID NO:2, SEQ ID NO:3, SEQ ID NOS:5-55 and SEQ ID NO:56.

10. The method of claim 8 wherein said ST receptor binding peptide is selected from the group consisting of SEQ ID NO:2 and fragments and derivatives thereof.

11. The method of claim 10 wherein said ST receptor binding peptide is SEQ ID NO:2.

12. The method of claim 10 wherein said ST receptor binding peptide is initially administered to said individual in a loading dose of at least 0.5 microgram of ST receptor binding peptide per 10 kg. bodyweight of said individual.

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13. The method of claim 12 wherein said loading dose is .1-10 micrograms ST receptor binding peptide per 10 kg. bodyweight of said individual.

14. The method of claim 13 wherein said loading dose is 3-5 micrograms ST receptor binding peptide per 10 kg. bodyweight of said individual.

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15. The method of claim 14 wherein said loading dose is about 4 micrograms of ST receptor binding peptide per 10 kg. bodyweight of said individual

16. The method of claim 10 wherein said ST receptor binding peptide is infused into said individual in a dose of .5-8 micrograms of ST receptor binding peptide per 10 kg. bodyweight of said individual per hour.

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17. The method of claim 16 wherein said ST receptor binding peptide is infused into said individual in a dose of 1-5 micrograms of ST receptor binding peptide per 10 kg.

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bodyweight of said individual per hour.

18. The method of claim 17 wherein said ST receptor binding peptide is infused into said individual in a dose of about 3 micrograms of ST receptor binding peptide per 10 kg.  
5 bodyweight of said individual per hour.

19. The method of claim 10 wherein said ST receptor binding peptide is infused into said individual for at least 8 hours.

10 20. The method of claim 19 wherein said ST receptor binding peptide is infused into said individual for at least 12 hours.

21. The method of claim 20 wherein said ST receptor binding peptide is infused into said individual for at least 16 hours.

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22. The method of claim 21 wherein said ST receptor binding peptide is infused into said individual for at least 20 hours.

23. The method of claim 22 wherein said ST receptor binding peptide is infused into  
20 said individual for at least 24 hours.

24. The method of claim 1 wherein said ST receptor ligand is initially administered to said individual in a loading dose of at least 0.1nM per 10 kg. bodyweight of said individual.

25 25. The method of claim 24 wherein said loading dose is 0.1-10nM of ST receptor ligand per 10 kg. bodyweight of said individual.

26. The method of claim 25 wherein said loading dose is 0.5-8nM of ST receptor ligand per 10 kg. bodyweight of said individual.

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27. The method of claim 26 wherein said loading dose is 1-5nM of ST receptor ligand per 10 kg. bodyweight of said individual.

28. The method of claim 1 wherein said ST receptor ligand is infused into said individual in a dose of .1-10nM of ST receptor ligand per 10 kg. bodyweight of said individual.

29. The method of claim 28 wherein said ST receptor ligand is infused into said individual in a dose of .5-8nM of ST receptor ligand per 10 kg. bodyweight of said individual.

30. The method of claim 29 wherein said ST receptor ligand is infused into said individual in a dose of 1.5nM of ST receptor ligand per 10 kg. bodyweight of said individual.

31. The method of claim 1 wherein said ST receptor ligand is infused into said individual for at least 8 hours.

32. The method of claim 31 wherein said ST receptor ligand is infused into said individual for at least 12 hours.

33. The method of claim 32 wherein said ST receptor ligand is infused into said individual for at least 16 hours.

34. The method of claim 33 wherein said ST receptor ligand is infused into said individual for at least 20 hours.

35. The method of claim 34 wherein said ST receptor ligand is infused into said individual for at least 24 hours.

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36. A pharmaceutical composition comprising:

- a) sterile, pyrogen free ST receptor ligand ; and
- b) a pharmaceutically acceptable carrier or diluent;

wherein said composition contains at least .6nM of ST receptor ligand.

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37. The pharmaceutical composition of claim 36 comprising at least 1.2nM of ST receptor ligand.

38. The pharmaceutical composition of claim 37 comprising at least 6nM of ST receptor  
10 ligand.

39. The pharmaceutical composition of claim 36 wherein said ST receptor ligand is an  
ST receptor binding peptide selected from the group consisting of SEQ ID NO:1 and  
fragments and derivatives thereof.

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40. The pharmaceutical composition of claim 39 comprising a t least 3nM of ST  
receptor ligand .

41. The pharmaceutical composition of claim 40 comprising at least 5nM of ST receptor  
20 ligand.

42. A method of treating an individual who has metastasized colorectal cancer  
comprising the steps of:

25 increasing the number of ST receptor molecules on the surface of a metastasized  
colorectal cancer cell in said individual by administering to said individual by substantially  
continuous infusion, at least .1-10nM of an ST receptor ligand per 10 kg. bodyweight of said  
individual per hour for at least 6 hours, wherein ST receptor ligand molecules bind to ST  
receptors on the surface of a metastasized colorectal cancer cell in said individual and the  
number of ST receptor molecules on the surface of said metastasized colorectal cancer cell  
30 is increased; and

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administering a therapeutic pharmaceutical composition that comprises components which target ST receptor for delivery of a therapeutic agent.

43. The method of claim 42 wherein said therapeutic pharmaceutical composition  
5 comprises a conjugated composition that comprises an ST receptor binding moiety and an active moiety, said active moiety is a therapeutic agent.

44. The method of claim 43 wherein said ST receptor binding moiety is a peptide.

10 45. The method of claim 43 wherein said ST receptor binding moiety is selected from the group consisting of: SEQ ID NO:2, SEQ ID NO:3, SEQ ID NOS:5-56 and fragments and derivatives thereof.

46. The method of claim 43 wherein said therapeutic agent is radioactive.

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47. The method of claim 46 wherein said therapeutic agent is selected from the group consisting of:  $^{43}\text{K}$ ,  $^{52}\text{Fe}$ ,  $^{57}\text{Co}$ ,  $^{67}\text{Cu}$ ,  $^{67}\text{Ga}$ ,  $^{68}\text{Ga}$ ,  $^{77}\text{Br}$ ,  $^{81}\text{Rb}/^{81}\text{MKr}$ ,  $^{87}\text{MSr}$ ,  $^{99}\text{MTc}$ ,  $^{111}\text{In}$ ,  $^{113}\text{MIn}$ ,  $^{123}\text{I}$ ,  $^{125}\text{I}$ ,  $^{127}\text{Cs}$ ,  $^{129}\text{Cs}$ ,  $^{131}\text{I}$ ,  $^{132}\text{I}$ ,  $^{197}\text{Hg}$ ,  $^{203}\text{Pb}$ ,  $^{206}\text{Bi}$ ,  $^{47}\text{Sc}$ ,  $^{67}\text{Cu}$ ,  $^{90}\text{Y}$ ,  $^{109}\text{Pd}$ ,  $^{123}\text{I}$ ,  $^{125}\text{I}$ ,  $^{131}\text{I}$ ,  $^{186}\text{Re}$ ,  $^{188}\text{Re}$ ,  $^{199}\text{Au}$ ,  $^{211}\text{At}$ ,  $^{212}\text{Pb}$ ,  $^{212}\text{B}$ ,  $^{32}\text{P}$  and  $^{33}\text{P}$ ,  
20  $^{71}\text{Ge}$ ,  $^{77}\text{As}$ ,  $^{103}\text{Pb}$ ,  $^{105}\text{Rh}$ ,  $^{111}\text{Ag}$ ,  $^{119}\text{Sb}$ ,  $^{121}\text{Sn}$ ,  $^{131}\text{Cs}$ ,  $^{143}\text{Pr}$ ,  $^{161}\text{Tb}$ ,  $^{177}\text{Lu}$ ,  $^{191}\text{Os}$ ,  $^{193}\text{MPt}$  and  $^{197}\text{Hg}$ .

48. The method of claim 43 wherein said therapeutic agent is radiostable.

25 49. The method of claim 48 wherein said therapeutic agent is selected from the group consisting of: compounds that cause cell death, compounds that inhibit cell division, and compounds that induce cell differentiation,

50. The method of claim 48 wherein said therapeutic a gent is selected from the group

consisting of: chemotherapeutics, toxins and radiosensitizing agents.

51. The method of claim 48 wherein said therapeutic agent is selected from the group consisting of: methotrexate, doxorubicin, daunorubicin, cytosinarabioside, etoposide, 5-4  
5 fluorouracil, melphalan, chlorambucil, *cis*-platin, vindesine, mitomycin, bleomycin, purothionin, macromomycin, 1,4-benzoquinone derivatives, trenimon, ricin, ricin A chain, *Pseudomonas* exotoxin, diphtheria toxin, *Clostridium perfringens* phospholipase C, bovine pancreatic ribonuclease, pokeweed antiviral protein, abrin, abrin A chain, cobra venom factor, gelonin, saporin, modeccin, viscumin, volkensin, nitroimidazole, metronidazole and  
10 misonidazole.

52. A method of imaging a metastasized colorectal tumor in an individual who has metastasized colorectal cancer comprising the steps of:  
increasing the number of ST receptor molecules on the surface of a metastasized  
15 colorectal cancer cell in said individual by administering to said individual by substantially continuous infusion, at least .1-10nM of an ST receptor ligand per 10 kg. bodyweight of said individual per hour for at least 6 hours, wherein ST receptor ligand molecules bind to ST receptors on the surface of a metastasized colorectal cancer cell in said individual and the number of ST receptor molecules on the surface of said metastasized colorectal cancer cell  
20 is increased; and  
administering an pharmaceutical imaging composition that comprises components which target ST receptor for delivery of an imaging agent.

53. The method of claim 52 wherein said pharmaceutical imaging composition  
25 comprises a conjugated composition that comprises an ST receptor binding moiety and an active moiety, said active moiety is an imaging agent.

54. The method of claim 53 wherein said ST receptor binding moiety is a peptide.

30 55. The method of claim 53 wherein said ST receptor binding moiety is selected from

the group consisting of: SEQ ID NO:2, SEQ ID NO:3, SEQ ID NOS:5-56 and fragments and derivatives thereof.

56. The method of claim 53 wherein said imaging agent is radioactive.

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57. The method of claim 56 wherein said imaging agent is selected from the group consisting of:  $^{43}\text{K}$ ,  $^{52}\text{Fe}$ ,  $^{57}\text{Co}$ ,  $^{67}\text{Cu}$ ,  $^{67}\text{Ga}$ ,  $^{68}\text{Ga}$ ,  $^{77}\text{Br}$ ,  $^{81}\text{Rb}/^{81}\text{MKr}$ ,  $^{87}\text{MSr}$ ,  $^{99}\text{MTc}$ ,  $^{111}\text{In}$ ,  $^{113}\text{MIn}$ ,  $^{123}\text{I}$ ,  $^{125}\text{I}$ ,  $^{127}\text{Cs}$ ,  $^{129}\text{Cs}$ ,  $^{131}\text{I}$ ,  $^{132}\text{I}$ ,  $^{197}\text{Hg}$ ,  $^{203}\text{Pb}$ ,  $^{206}\text{Bi}$ ,  $^{47}\text{Sc}$ ,  $^{67}\text{Cu}$ ,  $^{90}\text{Y}$ ,  $^{109}\text{Pd}$ ,  $^{123}\text{I}$ ,  $^{125}\text{I}$ ,  $^{131}\text{I}$ ,  $^{186}\text{Re}$ ,  $^{188}\text{Re}$ ,  $^{199}\text{Au}$ ,  $^{211}\text{At}$ ,  $^{212}\text{Pb}$ ,  $^{212}\text{B}$ ,  $^{32}\text{P}$  and  $^{33}\text{P}$ ,  $^{71}\text{Ge}$ ,  $^{77}\text{As}$ ,  $^{103}\text{Pb}$ ,  $^{105}\text{Rh}$ ,  $^{111}\text{Ag}$ ,  $^{119}\text{Sb}$ ,  $^{121}\text{Sn}$ ,  $^{131}\text{Cs}$ ,  $^{143}\text{Pr}$ ,  $^{161}\text{Tb}$ ,  $^{177}\text{Lu}$ ,  $^{191}\text{Os}$ ,  $^{193}\text{MPt}$  and  $^{197}\text{Hg}$ .

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58. The method of claim 53 wherein said imaging agent is radiostable.

15 59. A method of determining whether an individual has metastasized colorectal cancer comprising the steps of:

increasing the number of ST receptor molecules on the surface of a metastasized colorectal cancer cell in said individual by administering to said individual by substantially continuous infusion, at least .1-10nM of an ST receptor ligand per 10 kg. bodyweight of said individual per hour for at least 6 hours, wherein ST receptor ligand molecules bind to ST receptors on the surface of a metastasized colorectal cancer cell in said individual and the number of ST receptor molecules on the surface of said metastasized colorectal cancer cell is increased;

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obtaining a sample of extraintestinal body fluid and/or tissue from said individual;

25 and

detecting the presence of mRNA encoding ST receptor in said sample; wherein the presence of said mRNA indicates that the individual has metastatic colorectal cancer.

60. The method of claim 59 wherein the presence of said mRNA is detected using a



polymerase chain reaction.

**61.** A method of delivering an active compound to a colorectal cell in an individual comprising the steps of:

5           increasing the number of ST receptor molecules on the surface of a colorectal cell in said individual by administering to said individual by substantially continuous infusion, at least .1-10nM of an ST receptor ligand per 10 kg. bodyweight of said individual per hour for at least 6 hours, wherein ST receptor ligand molecules bind to ST receptors on the surface of a colorectal cell in said individual and the number of ST receptor molecules on the surface  
10 of said colorectal cell is increased; and

          administering an pharmaceutical composition that comprises said active compound bound to an ST receptor ligand;

          wherein said active compound bound to said ST receptor ligand localizes at the surface of said colorectal cell, said ST receptor ligand binds to an ST receptor on said  
15 colorectal cell and said active compound and said ST receptor ligand bound to said active compound is taken up by said colorectal cell.

**62.** The method of claim 61 wherein said active compound bound to said ST receptor ligand is covalently bound to said ST receptor ligand.  
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**63.** The method of claim 61 wherein said active compound is a nucleic acid molecule.

**64.** A method of inducing a cytostatic effect in a primary or metastasized colorectal, gastric or esophageal cancer cell in an individual who has primary or metastasized  
25 colorectal, gastric or esophageal cancer, said method comprising the step of:

          administering to said individual by substantially continuous infusion, a cytostatically effective amount of an ST receptor ligand per hour for a period of time sufficient to have a therapeutic effect by the cytotoxic effect of the ST receptor ligand,

          wherein ST receptor ligand molecules bind to ST receptors on the surface of a  
30 primary or metastasized colorectal, gastric or esophageal cancer cell in said individual and

induces a cystostatic effect in said cells.

65. A method of inhibiting the proliferation of a primary or metastasized colorectal, gastric or esophageal cancer cell in an individual who primary or metastasized colorectal, gastric or esophageal cancer, said method comprising the step of:
- 5 administering to said individual by substantially continuous infusion, a cytostatically effective amount of an ST receptor ligand per hour for a period of time sufficient to have a therapeutic effect by the cytostatic effect of the ST receptor ligand,
- 10 wherein ST receptor ligand molecules bind to ST receptors on the surface of a primary or metastasized colorectal, gastric or esophageal cancer cell in said individual and inhibits proliferation of said cells.

66. A method of treating an individual identified as having metastasized colorectal or primary or metastasized gastric or esophageal cancer cell, said method comprising the step of:

5 increasing the number of ST receptor molecules on the surface of a metastatic colorectal or primary or metastatic gastric or esophageal cancer cell by administering to said individual by substantially continuous infusion of an ST receptor ligand, wherein ST receptor ligand molecules bind to ST receptors on the surface of a metastasized colorectal, or primary or metastasized gastric or esophageal cancer cells;

10 administering to said individual by substantially continuous infusion, a cytostatically effective amount of an ST receptor ligand per hour for a period of time sufficient to have a therapeutic effect by the cytostatic effect of the ST receptor ligand,

wherein ST receptor ligand molecules bind to ST receptors on the surface of a metastasized colorectal or primary or metastasized gastric or esophageal cancer cell in said individual and inhibits proliferation of said cells.

67. A method of inhibiting metastasis of primary or metastasized colorectal, gastric or esophageal cancer cell, said method comprising the step of:

20 administering to said individual by substantially continuous infusion, an amount of an ST receptor ligand per hour for a period of time sufficient to inhibit metastasis,

wherein ST receptor ligand molecules bind to ST receptors on the surface of a primary or metastasized colorectal, gastric or esophageal cancer cell in said individual and inhibits metastasis of said cells.

25 68. The method of claim 64, 65, 66 or 67 further comprising the step of administering a therapeutic agent.

69. The method of claim 67 wherein the therapeutic agent is 5-fluorouracil.

30 70. The method of claim 67 wherein the therapeutic agent is bleomycin.

71. The method of claim 64, 65, 66 or 67 wherein said ST receptor ligand is administered into the circulatory system of said individual.

5 72. The method of claim 64, 65, 66 or 67 wherein said ST receptor ligand is administered intravenously.

73. The method of claim 64, 65, 66 or 67 wherein said ST receptor ligand is administered intratumorally.

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74. The method of claim 64, 65, 66 or 67 wherein said ST receptor ligand is an anti-ST receptor antibody.

15 75. The method of claim 74 wherein said ST receptor ligand is an anti-ST receptor monoclonal antibody.

76. The method of claim 64, 65, 66 or 67 wherein said ST receptor ligand is an ST receptor binding peptide.

20 77. The method of claim 76 wherein said ST receptor peptide is selected from the group consisting of: SEQ ID NO:2, SEQ ID NO:3, SEQ ID NOS:5-56 and fragments and derivatives thereof.

25 78. The method of claim 77 wherein said ST receptor binding peptide is selected from the group consisting of SEQ ID NO:2, SEQ ID NO:3, SEQ ID NOS:5-55 and SEQ ID NO:56.

30 79. The method of claim 64, 65, 66 or 67 wherein said ST receptor binding peptide is initially administered to said individual in a loading dose of at least 0.5 microgram of ST receptor binding peptide per 10 kg. bodyweight of said individual.

80. The method of claim 64, 65, 66 or 67 wherein said loading dose is .1-10 micrograms ST receptor binding peptide per 10 kg. bodyweight of said individual.

5 81. The method of claim 64, 65, 66 or 67 wherein said loading dose is 3-5 micrograms ST receptor binding peptide per 10 kg. bodyweight of said individual.

82. The method of claim 64, 65, 66 or 67 wherein said loading dose is about 4 micrograms of ST receptor binding peptide per 10 kg. bodyweight of said individual.

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83. The method of claim 64, 65, 66 or 67 wherein said ST receptor binding peptide is infused into said individual in a dose of .5-8 micrograms of ST receptor binding peptide per 10 kg. bodyweight of said individual per hour.

15 84. The method of claim 64, 65, 66 or 67 wherein said ST receptor binding peptide is infused into said individual in a dose of 1-5 micrograms of ST receptor binding peptide per 10 kg. bodyweight of said individual per hour.

20 85. The method of claim 64, 65, 66 or 67 wherein said ST receptor binding peptide is infused into said individual in a dose of about 3 micrograms of ST receptor binding peptide per 10 kg. bodyweight of said individual per hour.

86. The method of claim 64, 65, 66 or 67 wherein said ST receptor binding peptide is infused into said individual for at least 8 hours.

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87. The method of claim 64, 65, 66 or 67 wherein said ST receptor binding peptide is infused into said individual for at least 12 hours.

30 88. The method of claim 64, 65, 66 or 67 wherein said ST receptor binding peptide is infused into said individual for at least 16 hours.

89. The method of claim 64, 65, 66 or 67 wherein said ST receptor binding peptide is infused into said individual for at least 20 hours.
- 5 90. The method of claim 64, 65, 66 or 67 wherein said ST receptor binding peptide is infused into said individual for at least 24 hours.
91. The method of claim 64, 65, 66 or 67 wherein said ST receptor ligand is initially administered to said individual in a loading dose of at least 0.1nM per 10 kg. bodyweight of  
10 said individual.
92. The method of claim 64, 65, 66 or 67 wherein said loading dose is 0.1-10nM of ST receptor ligand per 10 kg. bodyweight of said individual.
- 15 93. The method of claim 64, 65, 66 or 67 wherein said loading dose is 0.5-8nM of ST receptor ligand per 10 kg. bodyweight of said individual.
94. The method of claim 64, 65, 66 or 67 wherein said loading dose is 1-5nM of ST receptor ligand per 10 kg. bodyweight of said individual.  
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95. The method of claim 64, 65, 66 or 67 wherein said ST receptor ligand is infused into said individual in a dose of .1-10nM of ST receptor ligand per 10 kg. bodyweight of said individual.
- 25 96. The method of claim 64, 65, 66 or 67 wherein said ST receptor ligand is infused into said individual in a dose of .5-8nM of ST receptor ligand per 10 kg. bodyweight of said individual.
97. The method of claim 64, 65, 66 or 67 wherein said ST receptor ligand is infused into  
30 said individual in a dose of 1.5nM of ST receptor ligand per 10 kg. bodyweight of said

individual.

98. The method of claim 64, 65, 66 or 67 wherein said ST receptor ligand is infused into said individual for at least 8 hours.

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99. The method of claim 64, 65, 66 or 67 wherein said ST receptor ligand is infused into said individual for at least 12 hours.

100. The method of claim 64, 65, 66 or 67 wherein said ST receptor ligand is infused into said individual for at least 16 hours.

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101. The method of claim 64, 65, 66 or 67 wherein said ST receptor ligand is infused into said individual for at least 20 hours.

102. The method of claim 64, 65, 66 or 67 wherein said ST receptor ligand is infused into said individual for at least 24 hours.

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103. The method of claim 64, 65, 66 or 67 further comprising administering calcium to said individual.

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104. A pharmaceutical composition comprising:

a) sterile, pyrogen free ST receptor ligand ; and

b) a pharmaceutically acceptable carrier or diluent;

wherein said composition contains at least .6nM of ST receptor ligand.

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105. The pharmaceutical composition of claim 104 comprising at least 1.2nM of ST receptor ligand.

106. The pharmaceutical composition of claim 104 comprising at least 6nM of ST receptor ligand.

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107. The pharmaceutical composition of claim 104 wherein said ST receptor ligand is an ST receptor binding peptide selected from the group consisting of SEQ ID NO:1 and fragments and derivatives thereof.

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108. The pharmaceutical composition of claim 107 comprising at least 3nM of ST receptor ligand .

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109. The pharmaceutical composition of claim 108 comprising at least 5nM of ST receptor ligand.

110. A method of treating an individual who has metastasized colorectal or primary or metastasized gastric or esophageal cancer comprising the steps of:

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increasing the number of ST receptor molecules on the surface of a metastasized colorectal or primary or metastasized gastric or esophageal cancer cell in said individual by administering to said individual by substantially continuous infusion, at least .1-10nM of an ST receptor ligand per 10 kg. bodyweight of said individual per hour for at least 6 hours, wherein ST receptor ligand molecules bind to ST receptors on the surface of a metastasized colorectal or primary or metastasized gastric or esophageal cancer cell in said individual and the number of ST receptor molecules on the surface of said metastasized colorectal or primary or metastasized gastric or esophageal cancer cell is increased; and

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administering a therapeutic pharmaceutical composition that comprises components which target ST receptor for delivery of a therapeutic agent.

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111. The method of claim 110 wherein said therapeutic pharmaceutical composition comprises a conjugated composition that comprises an ST receptor binding moiety and an active moiety, said active moiety is a therapeutic agent.

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112. The method of claim 110 wherein said ST receptor binding moiety is a peptide.



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**113.** The method of claim 110 wherein said ST receptor binding moiety is selected from the group consisting of: SEQ ID NO:2, SEQ ID NO:3, SEQ ID NOS:5-56 and fragments and derivatives thereof.

5 **114.** The method of claim 110 wherein said therapeutic agent is radioactive.

115. The method of claim 114 wherein said therapeutic agent is selected from the group consisting of:  $^{43}\text{K}$ ,  $^{52}\text{Fe}$ ,  $^{57}\text{Co}$ ,  $^{67}\text{Cu}$ ,  $^{67}\text{Ga}$ ,  $^{68}\text{Ga}$ ,  $^{77}\text{Br}$ ,  $^{81}\text{Rb}/^{81}\text{MKr}$ ,  $^{87}\text{MSr}$ ,  $^{166}\text{Ho}$ ,  $^{211}\text{Bi}$ ,  $^{153}\text{Sm}$ ,  $^{113}\text{MIn}$ ,  $^{123}\text{I}$ ,  $^{125}\text{I}$ ,  $^{127}\text{Cs}$ ,  $^{129}\text{Cs}$ ,  $^{131}\text{I}$ ,  $^{132}\text{I}$ ,  $^{197}\text{Hg}$ ,  $^{203}\text{Pb}$ ,  $^{206}\text{Bi}$ ,  $^{47}\text{Sc}$ ,  $^{67}\text{Cu}$ ,  $^{90}\text{Y}$ ,  $^{109}\text{Pd}$ ,  $^{123}\text{I}$ ,  $^{125}\text{I}$ ,  $^{131}\text{I}$ ,  $^{186}\text{Re}$ ,  $^{188}\text{Re}$ ,  $^{199}\text{Au}$ ,  $^{211}\text{At}$ ,  $^{212}\text{Pb}$ ,  $^{212}\text{B}$ ,  
5  $^{32}\text{P}$  and  $^{33}\text{P}$ ,  $^{71}\text{Ge}$ ,  $^{77}\text{As}$ ,  $^{103}\text{Pb}$ ,  $^{105}\text{Rh}$ ,  $^{111}\text{Ag}$ ,  $^{119}\text{Sb}$ ,  $^{121}\text{Sn}$ ,  $^{131}\text{Cs}$ ,  $^{143}\text{Pr}$ ,  $^{161}\text{Tb}$ ,  $^{177}\text{Lu}$ ,  $^{191}\text{Os}$ ,  $^{193}\text{MPt}$  and  $^{197}\text{Hg}$ .
116. The method of claim 110 wherein said therapeutic agent is radiostable.
- 10 117. The method of claim 116 wherein said therapeutic agent is selected from the group consisting of: compounds that cause cell death, compounds that inhibit cell division, and compounds that induce cell differentiation,
118. The method of claim 110 wherein said therapeutic agent is selected from the group  
15 consisting of: chemotherapeutics, toxins and radiosensitizing agents.
119. The method of claim 110 wherein said therapeutic agent is selected from the group consisting of: methotrexate, doxorubicin, daunorubicin, cytosinarabioside, etoposide, 5-4 fluorouracil, melphalan, chlorambucil, *cis*-platin, vindesine, mitomycin, bleomycin,  
20 purothionin, macromomycin, 1,4-benzoquinone derivatives, trenimon, ricin, ricin A chain, *Pseudomonas* exotoxin, diphtheria toxin, *Clostridium perfringens* phospholipase C, bovine pancreatic ribonuclease, pokeweed antiviral protein, abrin, abrin A chain, cobra venom factor, gelonin, saporin, modeccin, viscumin, volkensin, nitroimidazole, metronidazole, misonidazole, porfimer and PDT agents.

**120.** A method of imaging a metastasized colorectal or primary or metastasized gastric or esophageal tumor in an individual who has metastasized colorectal or primary or metastasized gastric or esophageal cancer comprising the steps of:

- 5       increasing the number of ST receptor molecules on the surface of a metastasized colorectal or primary or metastasized gastric or esophageal cancer cell in said individual by administering to said individual by substantially continuous infusion, at least .1-10nM of an ST receptor ligand per 10 kg. bodyweight of said individual per hour for at least 6 hours, wherein ST receptor ligand molecules bind to ST receptors on the surface of a metastasized colorectal or primary or metastasized gastric or esophageal cancer cell in said individual and
- 10       the number of ST receptor molecules on the surface of said metastasized colorectal or primary or metastasized gastric or esophageal cancer cell is increased; and
- administering an pharmaceutical imaging composition that comprises components which target ST receptor for delivery of an imaging agent.

- 15       **121.** The method of claim 120 wherein said pharmaceutical imaging composition comprises a conjugated composition that comprises an ST receptor binding moiety and an active moiety, said active moiety is an imaging agent.

- 122.** The method of claim 120 wherein said ST receptor binding moiety is a peptide.
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**123.** The method of claim 120 wherein said ST receptor binding moiety is selected from the group consisting of: SEQ ID NO:2, SEQ ID NO:3, SEQ ID NOS:5-56 and fragments and derivatives thereof.

- 25       **124.** The method of claim 120 wherein said imaging agent is radioactive.

125. The method of claim 124 wherein said imaging agent is selected from the group consisting of:  $^{43}\text{K}$ ,  $^{52}\text{Fe}$ ,  $^{57}\text{Co}$ ,  $^{67}\text{Cu}$ ,  $^{67}\text{Ga}$ ,  $^{68}\text{Ga}$ ,  $^{77}\text{Br}$ ,  $^{81}\text{Rb}/^{81}\text{MKr}$ ,  $^{87}\text{MSr}$ ,  $^{166}\text{Ho}$ ,  $^{211}\text{Bi}$ ,  $^{153}\text{Sm}$ ,  $^{113}\text{MIn}$ ,  $^{123}\text{I}$ ,  $^{125}\text{I}$ ,  $^{127}\text{Cs}$ ,  $^{129}\text{Cs}$ ,  $^{131}\text{I}$ ,  $^{132}\text{I}$ ,  $^{197}\text{Hg}$ ,  $^{203}\text{Pb}$ ,  $^{206}\text{Bi}$ ,  $^{47}\text{Sc}$ ,  $^{67}\text{Cu}$ ,  $^{90}\text{Y}$ ,  $^{109}\text{Pd}$ ,  $^{123}\text{I}$ ,  $^{125}\text{I}$ ,  $^{131}\text{I}$ ,  $^{186}\text{Re}$ ,  $^{188}\text{Re}$ ,  $^{199}\text{Au}$ ,  $^{211}\text{At}$ ,  $^{212}\text{Pb}$ ,  $^{212}\text{B}$ ,  
 5  $^{32}\text{P}$  and  $^{33}\text{P}$ ,  $^{71}\text{Ge}$ ,  $^{77}\text{As}$ ,  $^{103}\text{Pb}$ ,  $^{105}\text{Rh}$ ,  $^{111}\text{Ag}$ ,  $^{119}\text{Sb}$ ,  $^{121}\text{Sn}$ ,  $^{131}\text{Cs}$ ,  $^{143}\text{Pr}$ ,  $^{161}\text{Tb}$ ,  $^{177}\text{Lu}$ ,  $^{191}\text{Os}$ ,  $^{193}\text{M Pt}$  and  $^{197}\text{Hg}$ .

126. The method of claim 120 wherein said imaging agent is radiostable.

10 127. A method of determining whether an individual has metastasized colorectal or primary or metastasized gastric or esophageal cancer comprising the steps of:

increasing the number of ST receptor molecules on the surface of a metastasized colorectal or primary or metastasized gastric or esophageal cancer cell in said individual by administering to said individual by substantially continuous infusion, at least .1-10nM of an  
 15 ST receptor ligand per 10 kg. bodyweight of said individual per hour for at least 6 hours, wherein ST receptor ligand molecules bind to ST receptors on the surface of a metastasized colorectal or primary or metastasized gastric or esophageal cancer cell in said individual and the number of ST receptor molecules on the surface of said metastasized colorectal or primary or metastasized gastric or esophageal cancer cell is increased;

20 obtaining a sample of extraintestinal body fluid and/or tissue from said individual; and

detecting the presence of protein or mRNA encoding ST receptor in said sample; wherein the presence of said protein or mRNA indicates that the individual has metastatic colorectal or primary or metastasized gastric or esophageal cancer.

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128. The method of claim 127 wherein the presence of said protein or mRNA is detected using a polymerase chain reaction or other means of detecting a nucleic acid representing the transcription or translation product of GCC or CRC-A.

129. A method of delivering an active compound to a colorectal, gastric or esophageal cell in an individual comprising the steps of:

increasing the number of ST receptor molecules on the surface of a colorectal, gastric or esophageal cell in said individual by administering to said individual by substantially continuous infusion, at least .1-10nM of an ST receptor ligand per 10 kg. bodyweight of said individual per hour for at least 6 hours, wherein ST receptor ligand molecules bind to ST receptors on the surface of a colorectal, gastric or esophageal cell in said individual and the number of ST receptor molecules on the surface of said colorectal, gastric or esophageal cell is increased; and

administering an pharmaceutical composition that comprises said active compound bound to an ST receptor ligand;

wherein said active compound bound to said ST receptor ligand localizes at the surface of said colorectal, gastric or esophageal cell, said ST receptor ligand binds to an ST receptor on said colorectal, gastric or esophageal cell and said active compound and said ST receptor ligand bound to said active compound is taken up by said colorectal, gastric or esophageal cell.

130. The method of claim 129 wherein said active compound bound to said ST receptor ligand is covalently bound to said ST receptor ligand.

131. The method of claim 129 wherein said active compound is a nucleic acid molecule.